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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/770,297	02/02/2004	Fumiaki Morishita	08917-094001	1420
26161	7590	12/21/2005	EXAMINER	
FISH & RICHARDSON PC P.O. BOX 1022 MINNEAPOLIS, MN 55440-1022			DAVIS, BRIAN J	
			ART UNIT	PAPER NUMBER
			1621	

DATE MAILED: 12/21/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 10/770,297	Applicant(s) MORISHITA ET AL.	
	Examiner Brian J. Davis	Art Unit 1621	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 05 October 2005.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-19 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-19 is/are rejected.
- 7) ☒ Claim(s) 11 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date <u>2/2/04; 6/28/04</u> | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claim Objections

Claim 11 is objected to because of the following informalities: the claim contains an obvious spelling error. The word "fraction" in the term "fraction distillation" should be deleted and replaced with the word "fractional." Appropriate correction is required.

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claim 1 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. It is unclear that a trialkanolamine is obtained after the redistillation step (the last line of the claim). The examiner respectfully suggests, in order to avoid any possible ambiguity, that the clause "to obtain a trialkanolamine" should be inserted as the last clause in the claim. It is also unclear if ammonia, water a monoalkanolamine and a dialkanolamine are indeed the "low-boiling substances" removed "...to obtain a mixture deprived of [these] low-boiling substances."

Claims 1 and 17 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. The "step" of producing a mixed alkanolamine in

Art Unit: 1621

step (2) is unclear. It would appear that this step is actually composed of two separate and distinct reactions (alkylene oxide/liquid ammonia and alkylene oxide/aqueous ammonia, respectively) whose product (mixtures) are combined. Clarification is required.

Claims 3 and 16 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. The reason for the use of the word "respectively" is unclear, particularly so when neither the physical reality of the claim limitations nor the grammar used in their description appears to require such a term. The examiner respectfully suggests, in order to avoid any possible ambiguities, that the term simply be deleted.

Claim 7 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. The exact meanings of the terms "analyze" and "analyzer" are unclear. That is, what type of analysis and analyzer does the claim contemplate and to what purpose?

Claims 14 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. The claim recites the limitation "the monoalkanolamine." There is insufficient antecedent basis for this limitation in the claim.

Claims 15 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant

Art Unit: 1621

regards as the invention. It is unclear how the removal of ammonia by nitrogen gas bubbling can be considered a fractional distillation. The pertinent clause in the independent claim (claim 11) explicitly limits the removal of ammonia, inter alia, to removal by fraction[al] distillation.

The remaining claims are also rejected under 35 USC 112, second paragraph, as claims which depend from indefinite claims are also indefinite. *Ex parte Cordova*, 10 USPQ 2d 1949, 1952 (PTO Bd. App. 1989).

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claim 11-18 is rejected under 35 U.S.C. 102(b) as being clearly anticipated by US 6,323,371. The reference teaches a process for the preparation of alkanolamines having improved color quality (abstract). The alkanolamines may be obtained from various processes, including that of ammonia reacted with ethylene oxide (column 2 line 37). The purification of triethanolamine, inter alia, is explicitly taught (column 3 line 11). Furthermore, alkanolamine feeds of various purity are contemplated (column 2 line 54). It is also recognized that it is known in the art that alkanolamines may be separated by distillation from their precursors in a plant for the preparation of alkanolamines (column 2 line 57). That is, applicant's step of removing ammonia, water, a monoalkanolamine

Art Unit: 1621

and a dialkanolamine is known in the art. Water, alcohol, ether solutions, or an alkanolamine solution, of phosphorous acid, hypophosphorous acid or compounds of these acids are then added to triethanolamine (column 3 line 36). The resulting mixture is then distilled (column 5 line 1).

The examiner notes for clarity of the record that the prior art water, alcohol, ether or alkanol solutions of phosphorous acid or hypophosphorous acid are encompassed by the instant claim language. That is, the prior art process is encompassed by applicant's step of adding a "low-boiling compound" e.g. water – regardless of the fact that it may a phosphorous compound dissolved in it.

The examiner also notes for clarity of the record that claims 15-18 have been included in this rejection as they represent mere engineering expediciencies. Absent some showing of unexpected results, the actual providence of the starting feed solutions (...[synthesized] in the presence of a zeolite catalyst...), or the particular engineering solution adopted for precursor separation (...pressure/vacuum distillation...nitrogen gas bubbling...) is immaterial and cannot impart patentability to the instant refining process.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

Claim 1-10 and 19 are rejected under 35 U.S.C. 103(a) as being unpatentable over US 3,849,262.

Applicant teaches a process for purifying a trialkanolamine wherein compounds which boil at temperatures both lower and higher than the trialkanolamine are removed to yield the desired, purified trialkanolamine. The trialkanolamine is produced from the reaction of an alkylene oxide with ammonia in the presence of a zeolite (claim 1). The dependent claims further refine the process.

Art Unit: 1621

US 3,849,262 teaches a process for the separation of mono-, di- and triethanolamine from crude mixtures obtained by the reaction of ethylene oxide and ammonia, in any of a number of known prior art process (column 1 line 6). The process is a series of distillations (Fig. 2).

Applicant distinguishes over the prior art in that the language used to describe the process is different and specific ("low-boiling substances," "high-boiling substance"). That is, the instant independent claim merely describes what the prior art distillation process innately accomplishes. Indeed, what all distillations innately accomplish: the selective removal of substances with higher and lower boiling points than the desired substance.

The examiner notes for clarity of the record that the dependent claims have been included in this rejection as they represent mere engineering expediencies. Absent some showing of unexpected results, the actual providence of the starting feed solutions (...[synthesized] in the presence of a zeolite catalyst...), or the particular engineering solution adopted for precursor separation (...pressure/vacuum distillation...nitrogen gas bubbling...), or the grouping and analyzing of aliquots removed from a column (claims 6 and 7), filtering, recycling, etc. are either immaterial (absent unexpected results), or are merely standard laboratory procedures which are part and parcel of distillations in general and cannot impart patentability to the instant refining process. The examiner also notes that it is well established that batch and continuous processes are not patentably distinct. See, for example, *In re Dilnot*, 319 F.2d 188, 138 USPQ 248 (CCPA 1963).

Double Patenting

A rejection based on double patenting of the "same invention" type finds its support in the language of 35 U.S.C. 101 which states that "whoever invents or discovers any new and useful process ... may obtain a patent therefor ..." (Emphasis added). Thus, the term "same invention," in this context, means an invention drawn to identical subject matter. See *Miller v. Eagle Mfg. Co.*, 151 U.S. 186 (1894); *In re Ockert*, 245 F.2d 467, 114 USPQ 330 (CCPA 1957); and *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970).

A statutory type (35 U.S.C. 101) double patenting rejection can be overcome by canceling or amending the conflicting claims so they are no longer coextensive in scope. The filing of a terminal disclaimer cannot overcome a double patenting rejection based upon 35 U.S.C. 101.

Applicant is advised that should claim 10 be found allowable, claim 19 will be objected to under 37 CFR 1.75 as being a substantial duplicate thereof. When two claims in an application are duplicates or else are so close in content that they both cover the same thing, despite a slight difference in wording, it is proper after allowing one claim to object to the other as being a substantial duplicate of the allowed claim. See MPEP § 706.03(k). The examiner respectfully suggests that claim 19 should properly depend from claim 11.

Conclusion

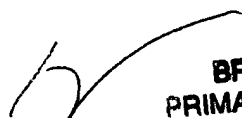
The prior art made of record and not relied upon is considered pertinent to applicant's disclosure: US 2,512,584; US 2,512,585; US 3,207,790; US 3,453,183; US 4,395,311; US 4,673,762; : US 5,292,958; US 5,693,866; US 6,388,137 and US 6,683,217 are cited to show related reactions and processes.

Art Unit: 1621

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Brian J. Davis whose telephone number is 571-272-0638. The examiner can normally be reached on 8:30-5:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Johann Richter can be reached on 571-272-0646. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



**BRIAN DAVIS
PRIMARY EXAMINER**

Brian J. Davis
December 15, 2005